

FIG. 1 (PRIOR ART)

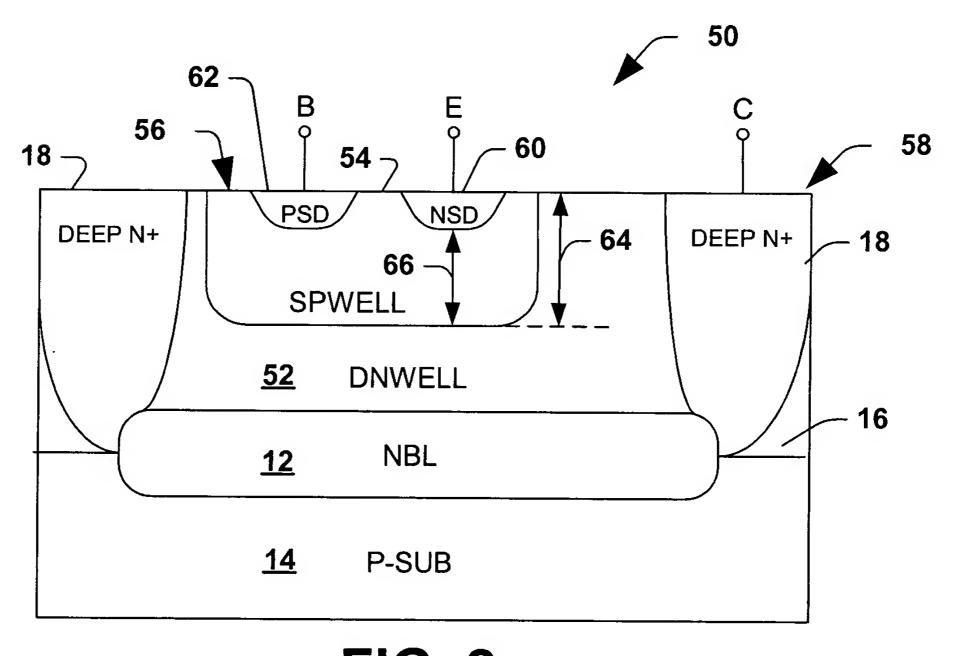
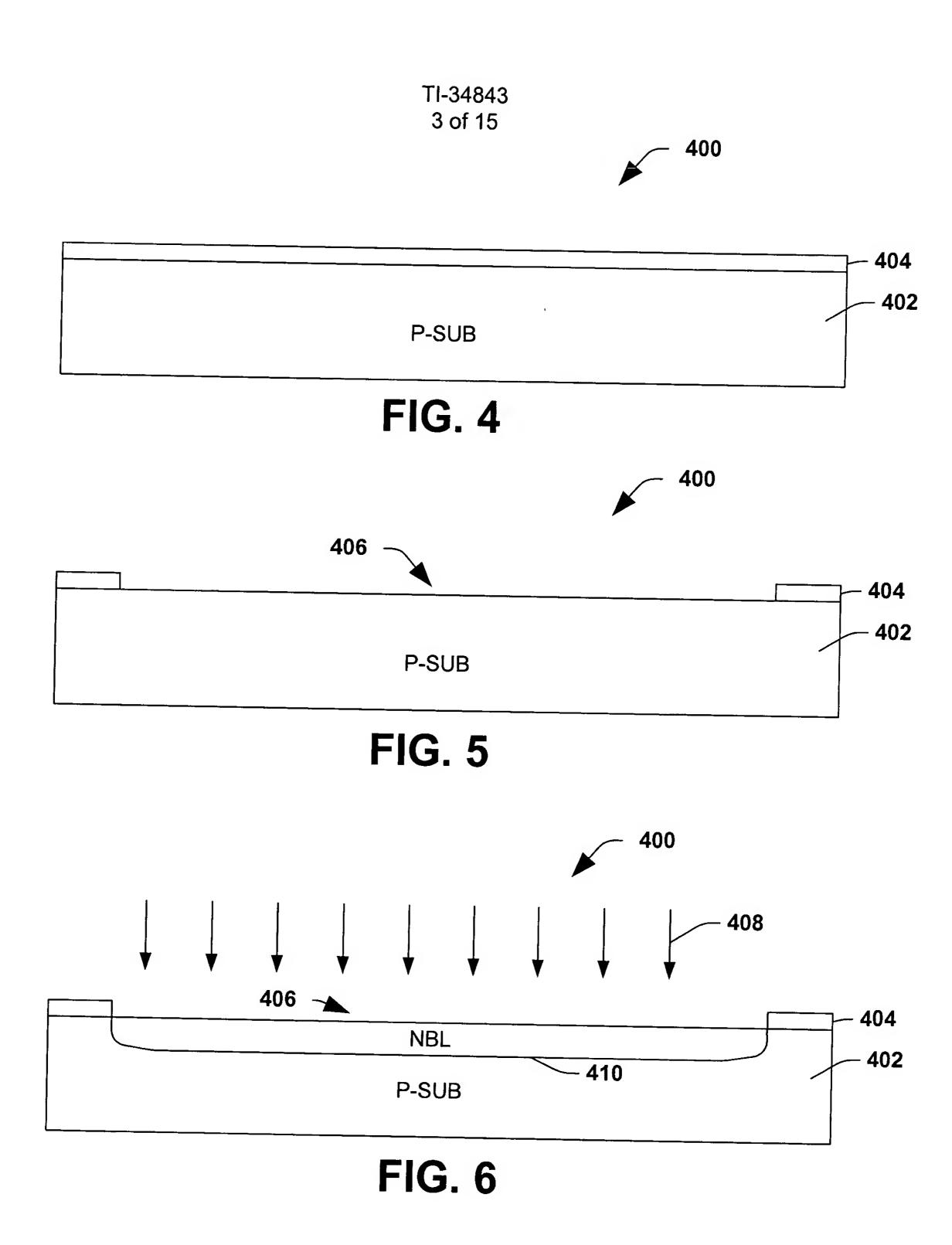
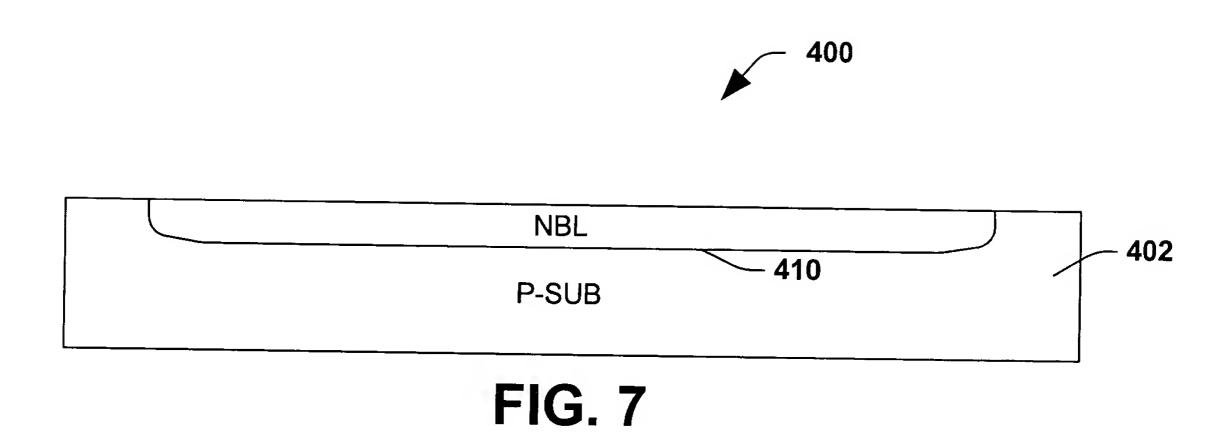


FIG. 2 (PRIOR ART)

TI-34843 2 of 15	
FORM FIRST MASKING MATERIAL OVER SUBSTRATE	
PATTERN FIRST MASKING MATERIAL	
PERFORM FIRST IMPLANT TO FORM NBL	- } 30€
REMOVE RESIDUAL FIRST MASKING MATERIAL]— 308
FORM P-EPI LAYER OVER SUBSTRATE]— 310
FORM SECOND MASKING MATERIAL OVER P-EPI LAYER	312
PATTERN SECOND MASKING MATERIAL] 314
PERFORM SECOND IMPLANT TO FORM DNWELL] 316
REMOVE RESIDUAL SECOND MASKING MATERIAL]— 318
FORM THIRD MASKING MATERIAL OVER P-EPI LAYER]— 320
PATTERN THIRD MASKING MATERIAL]— 322
PERFORM THIRD IMPLANT TO FORM DEEP N+ REGIONS]— 324
REMOVE RESIDUAL THIRD MASKING MATERIAL]— 326
FORM FOURTH MASKING LAYER OVER P-EPI LAYER] 328
PATTERN FOURTH MASKING MATERIAL]— 330
PERFORM FOURTH IMPLANT TO ESTABLISH P-TYPE BODY] 332
PERFORM FIFTH IMPLANT TO ESTABLISH N-TYPE SURFACE LAYER]— 334
REMOVE RESIDUAL FOURTH MASKING MATERIAL]— 336
FIELD OXIDATION] 338
FORM AND PATTERN FIFTH MASKING LAYER]— 340
PERFORM SIXTH IMPLANT TO ESTABLISH SPWELL]— 342
REMOVE RESIDUAL FIFTH MASKING MATERIAL	
FORM OXIDE LAYER]— 346
PATTERN OXIDE LAYER]— 348
FORM POLY-SILICON LAYER	350
PATTERN POLY-SILICON LAYER	352
PERFORM PSD/NSD IMPLANTS	354
PERFORM ANNEAL TO ESTABLISH EMITTER VIA DIFFUSION	356



TI-34843 4 of 15



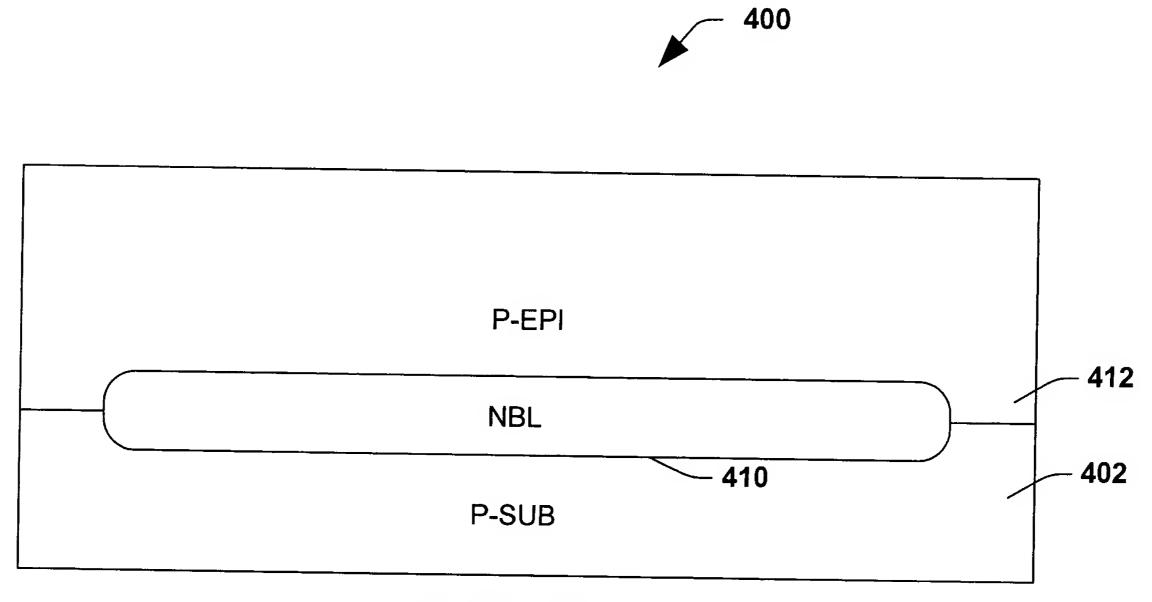
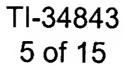


FIG. 8



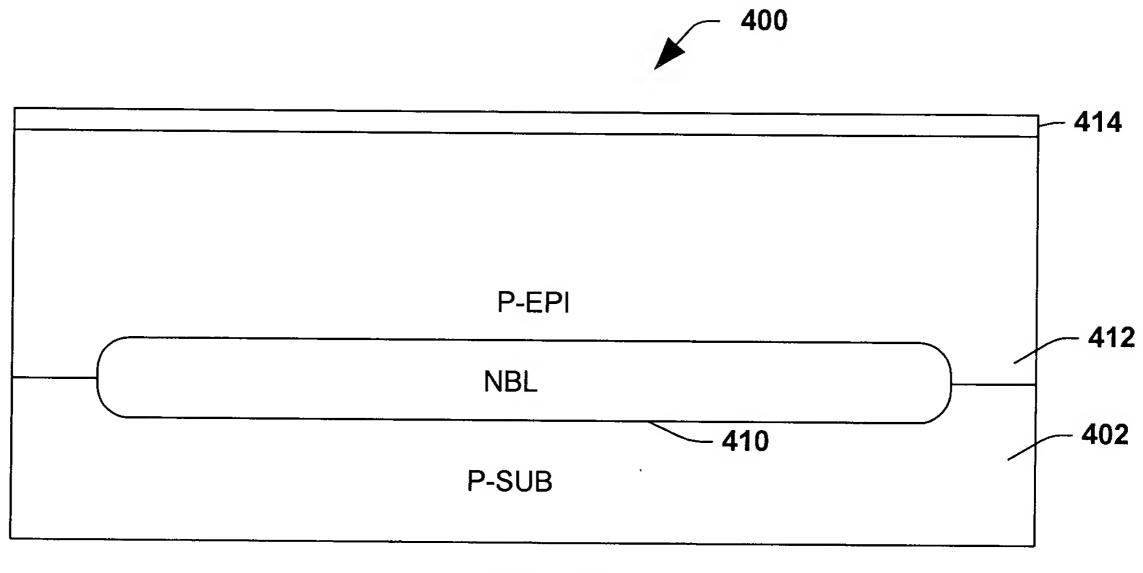


FIG. 9

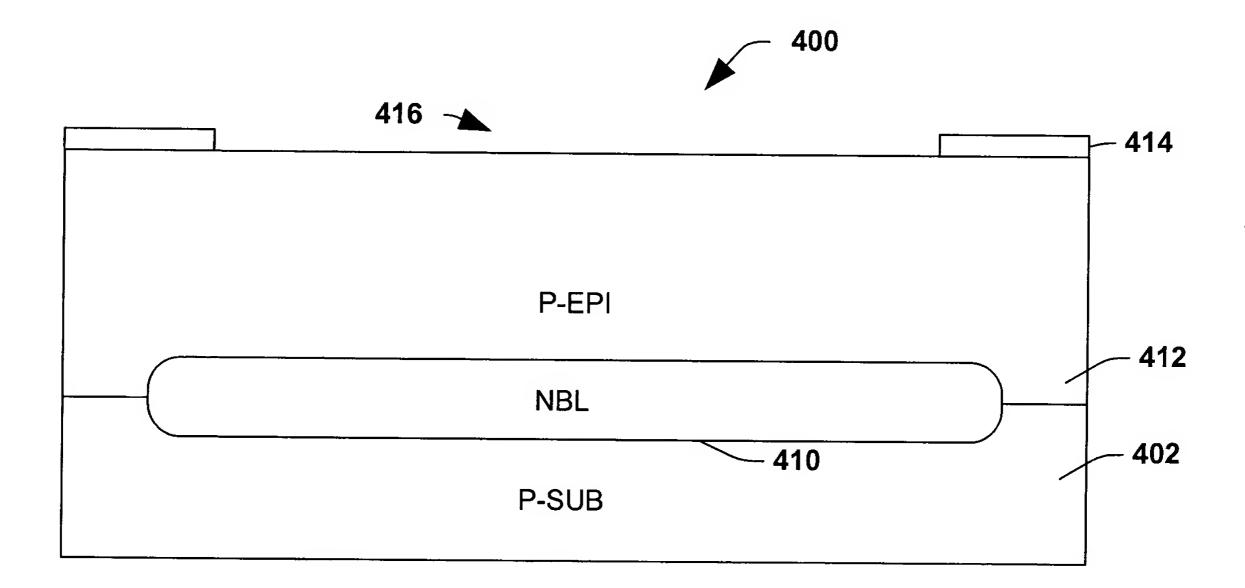
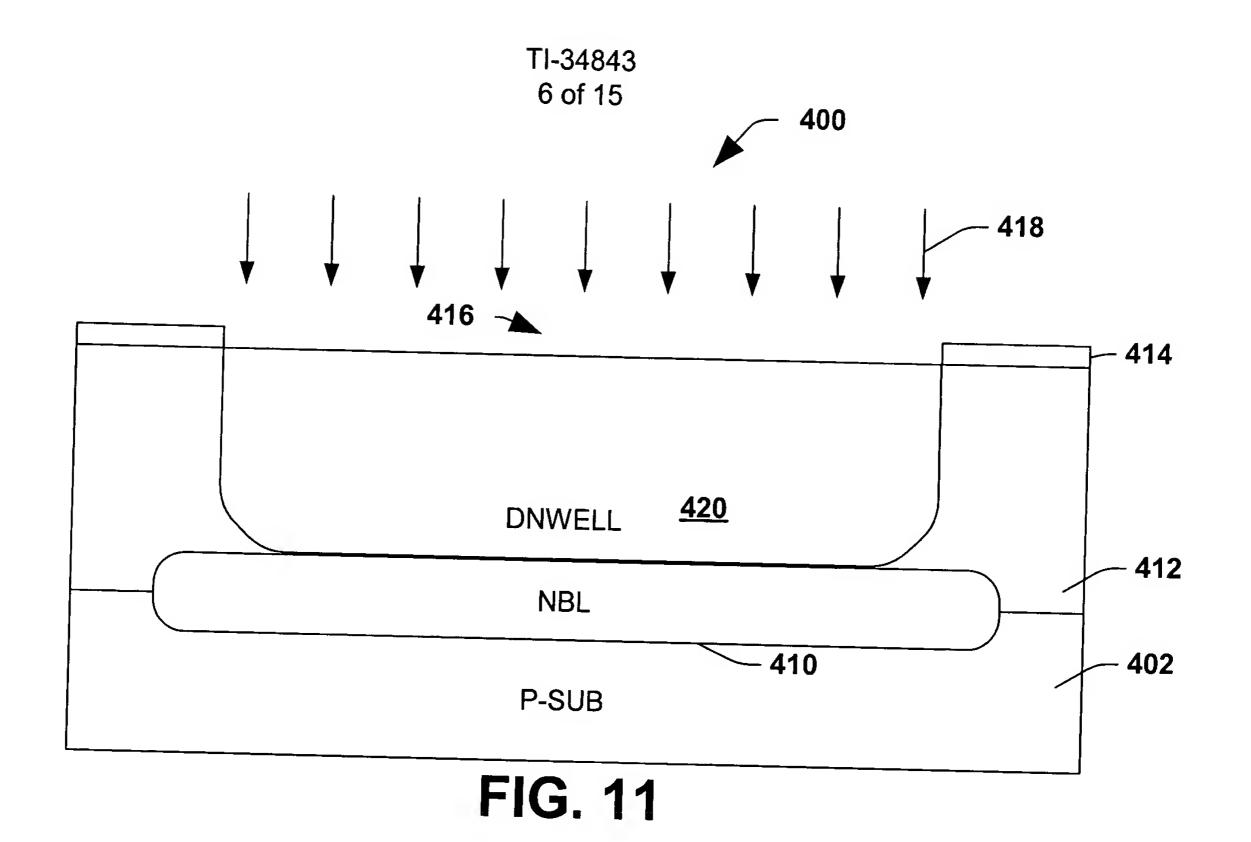


FIG. 10



DNWELL 420

NBL

P-SUB

FIG. 12

TI-34843 7 of 15

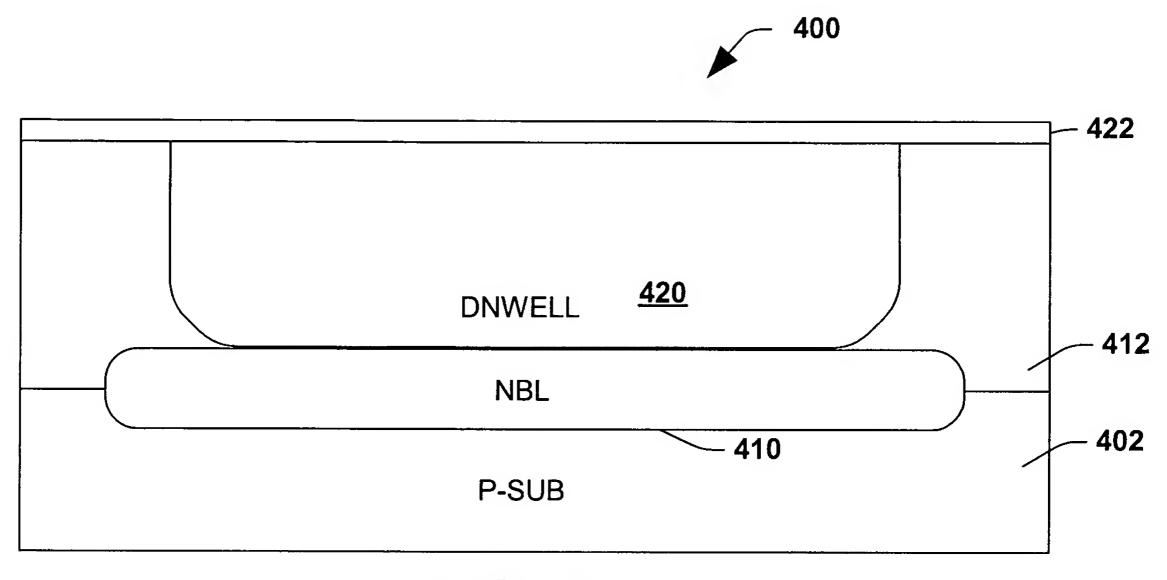


FIG. 13

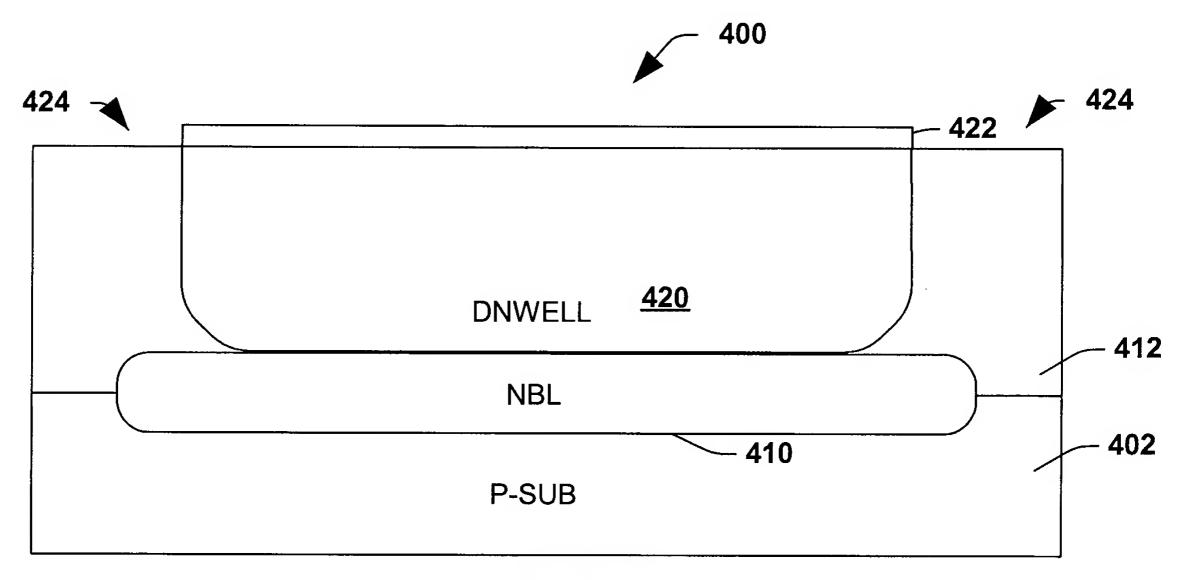
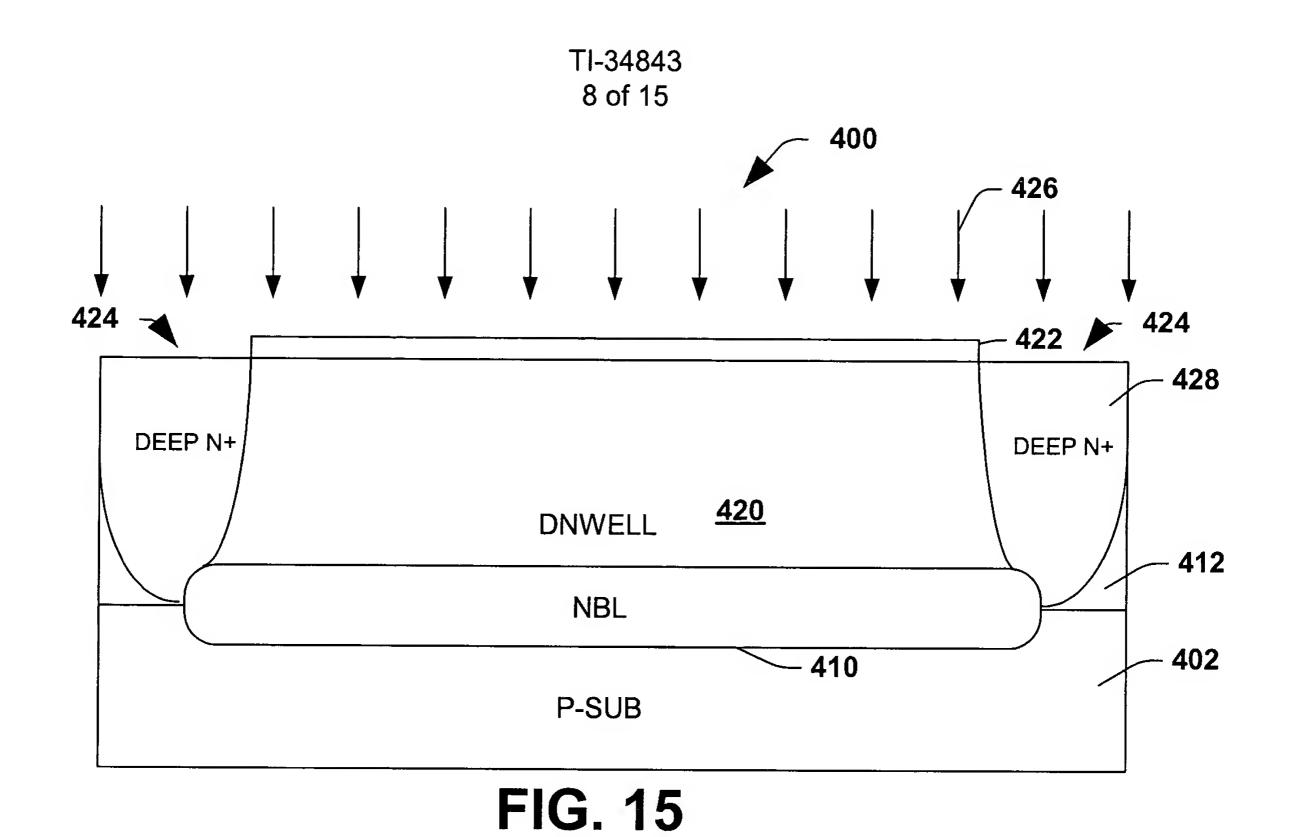
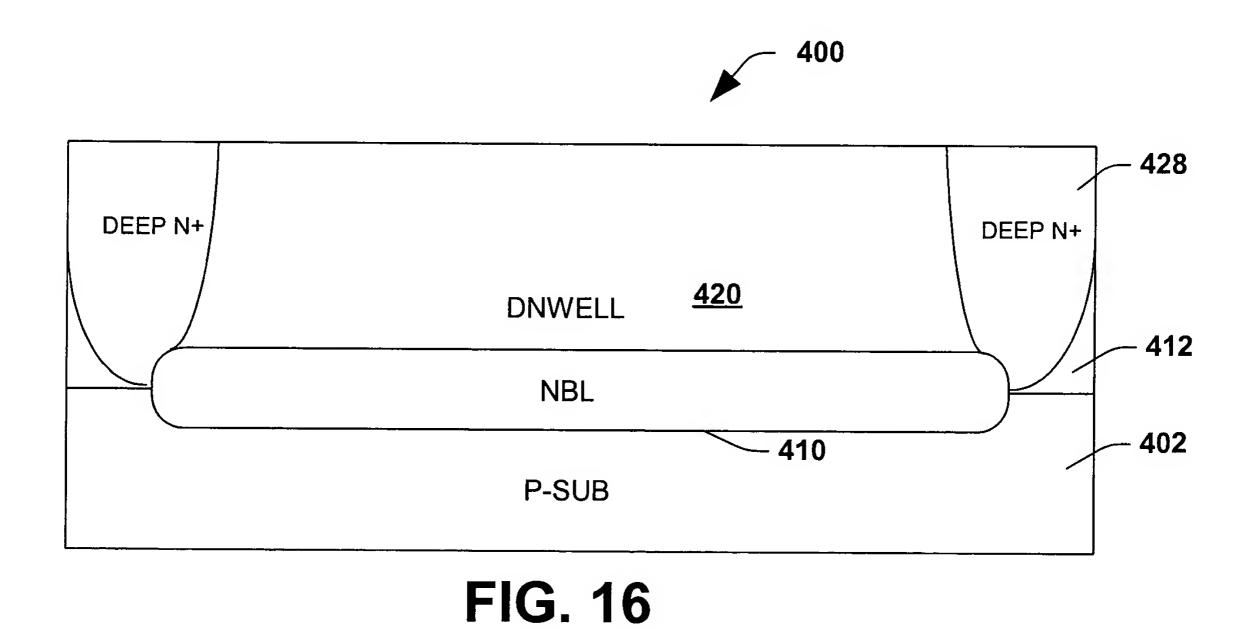


FIG. 14





TI-34843 9 of 15

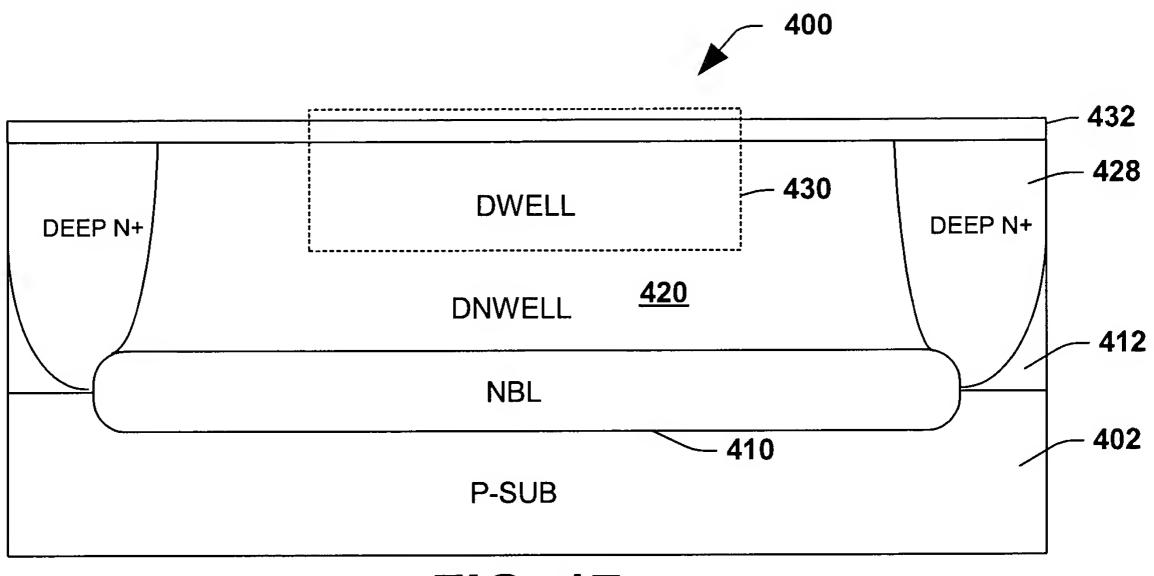


FIG. 17

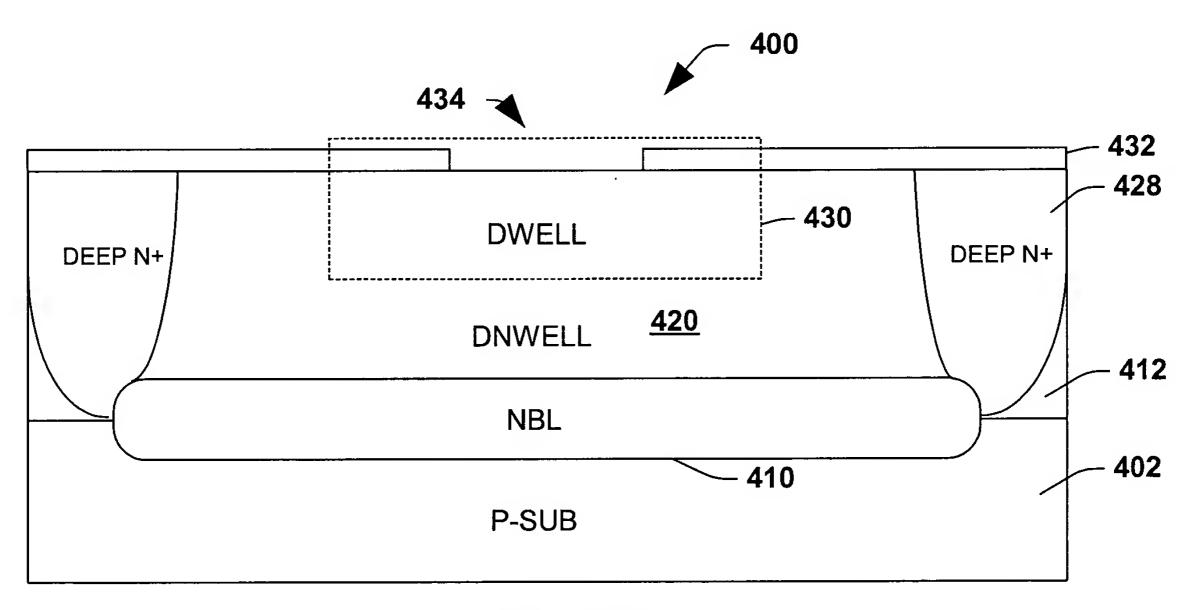


FIG. 18

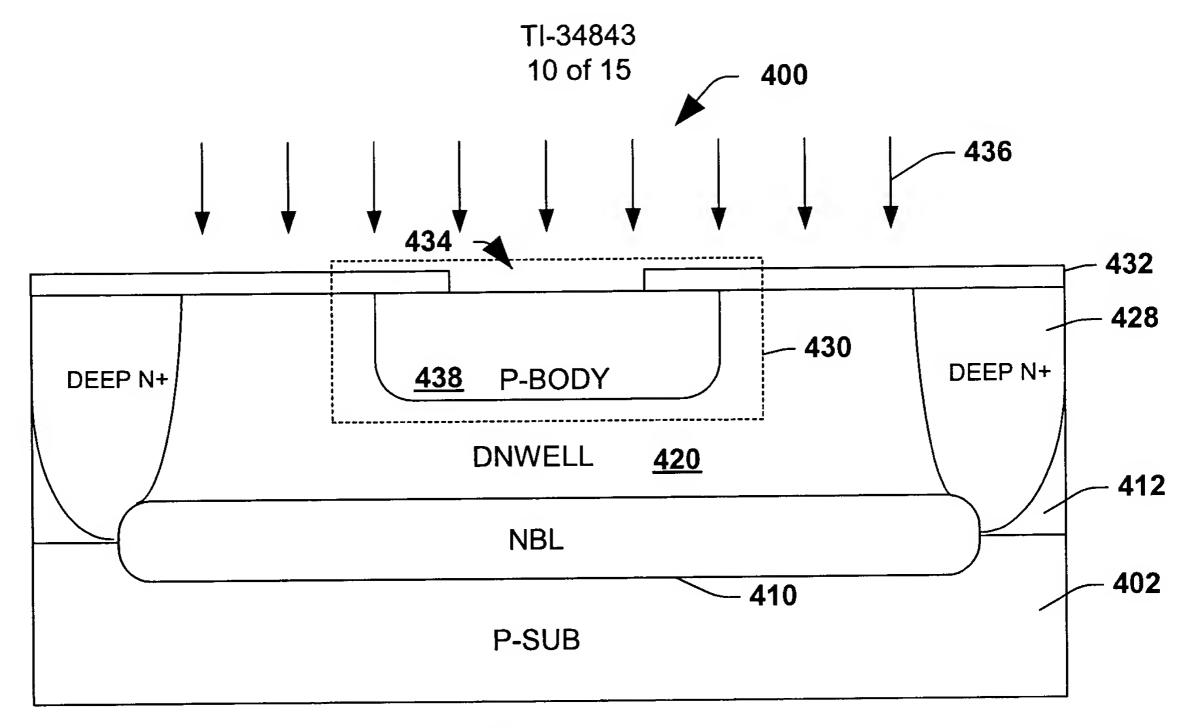


FIG. 19

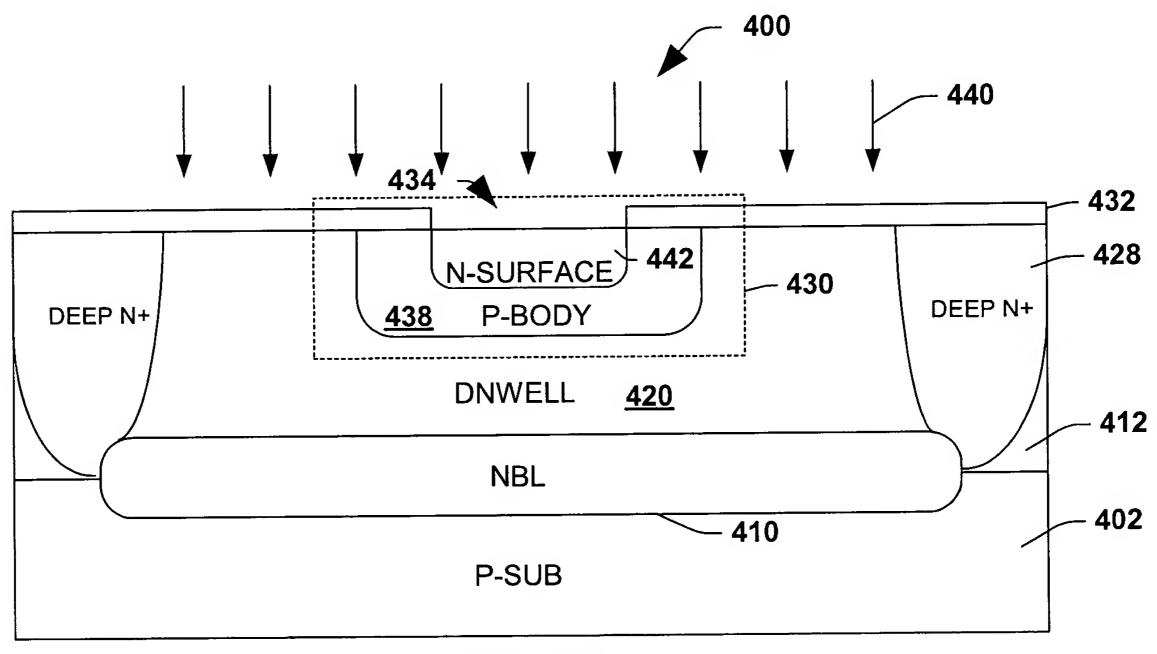
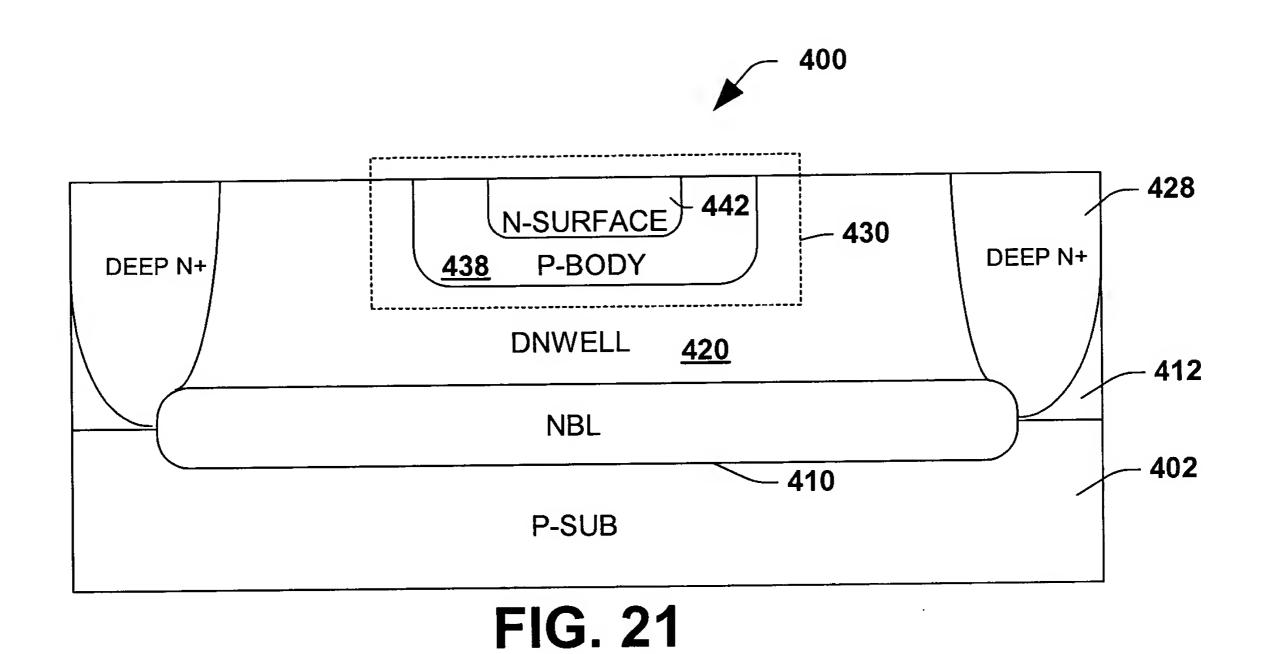


FIG. 20

TI-34843 11 of 15



400 450 450 **450** 428 N-SURFACE 442 DEEP N+ <u>438</u> P-BODY DEEP N+ **DNWELL** <u>420</u> 412 NBL 402 - 410 P-SUB FIG. 22

TI-34843 12 of 15

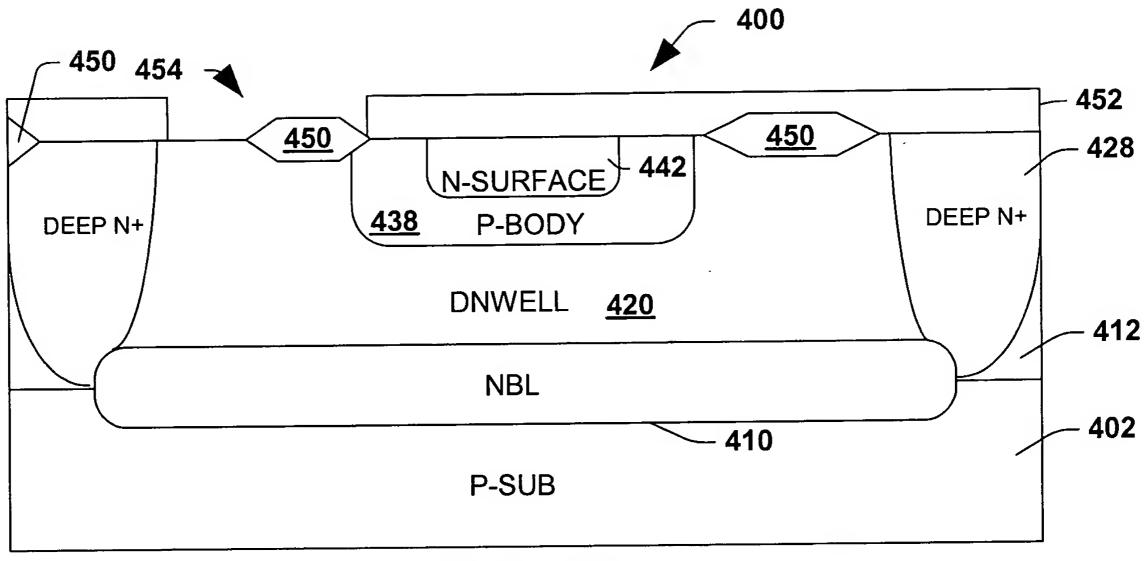


FIG. 23

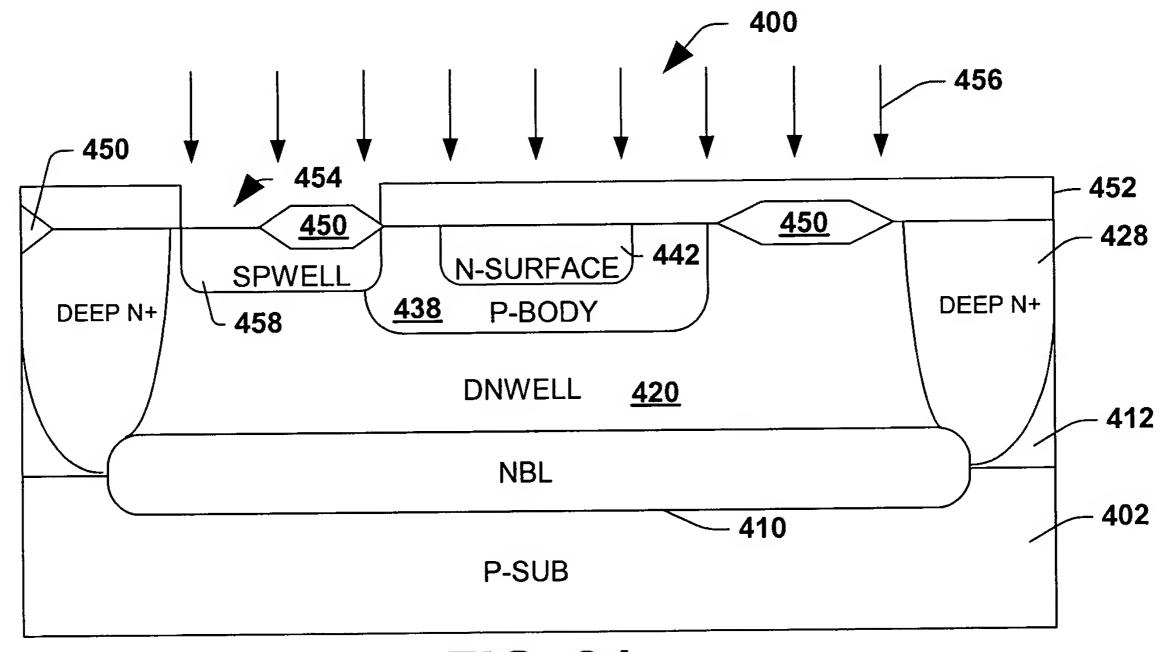


FIG. 24

TI-34843 13 of 15

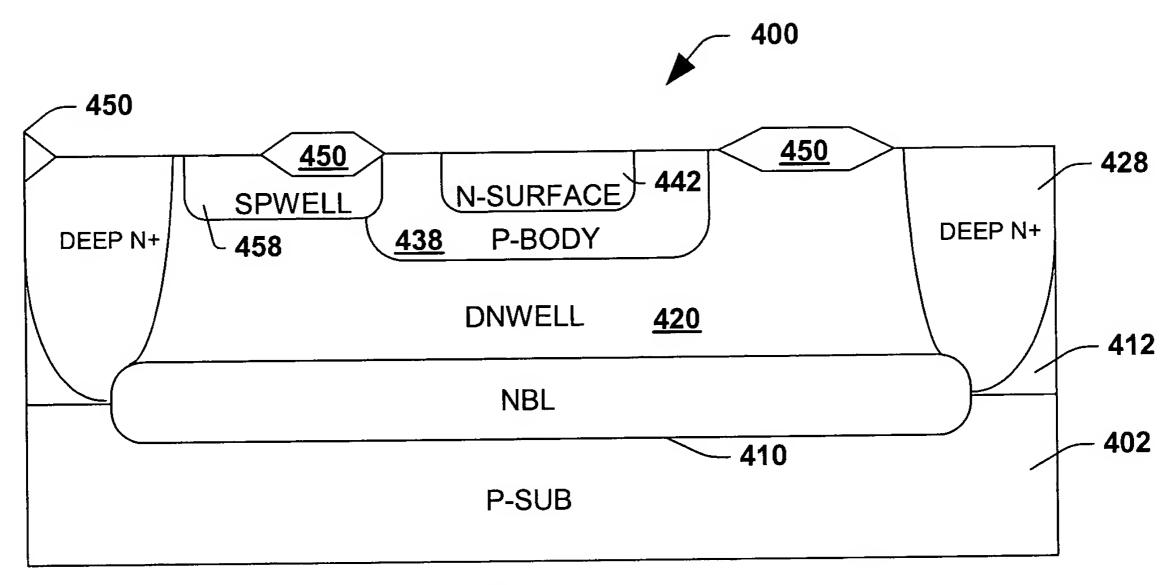


FIG. 25

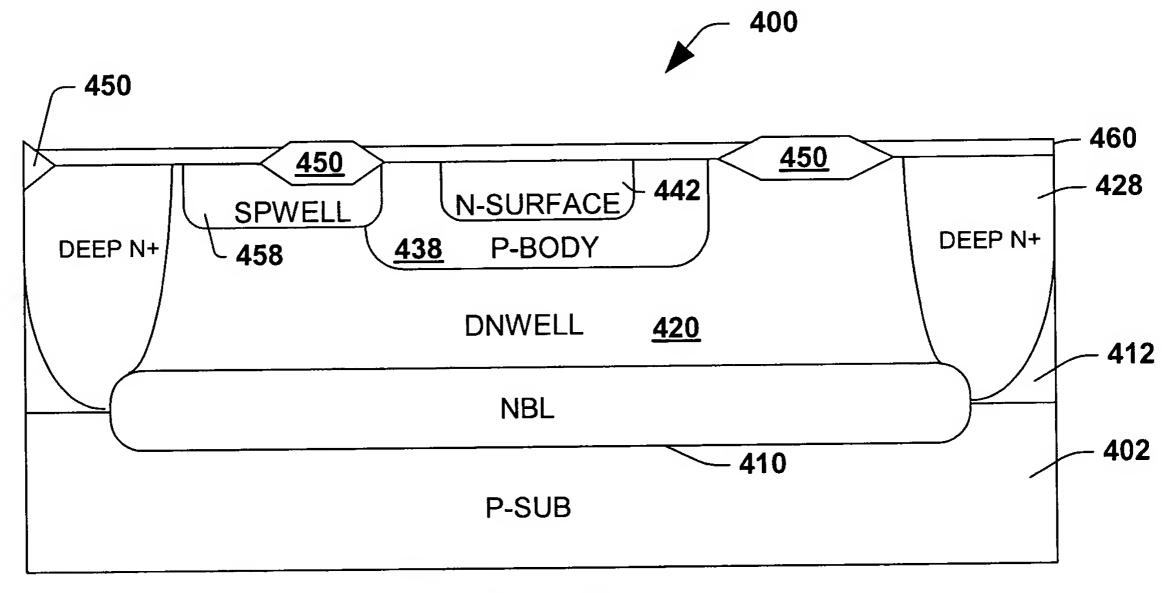


FIG. 26

TI-34843 14 of 15

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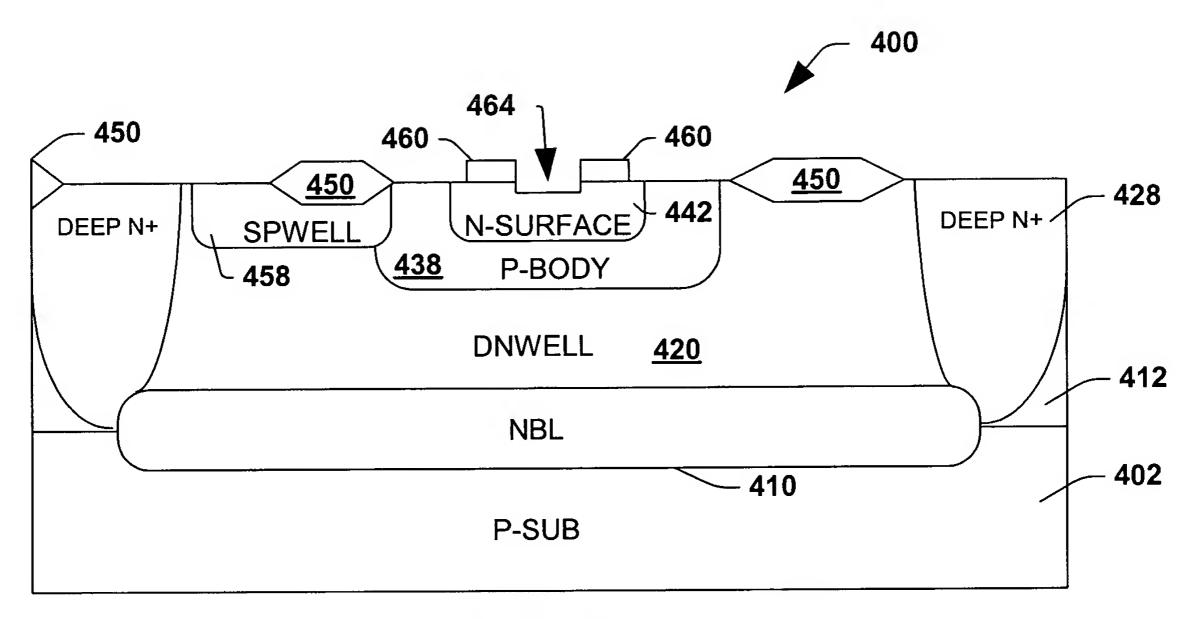


FIG. 27

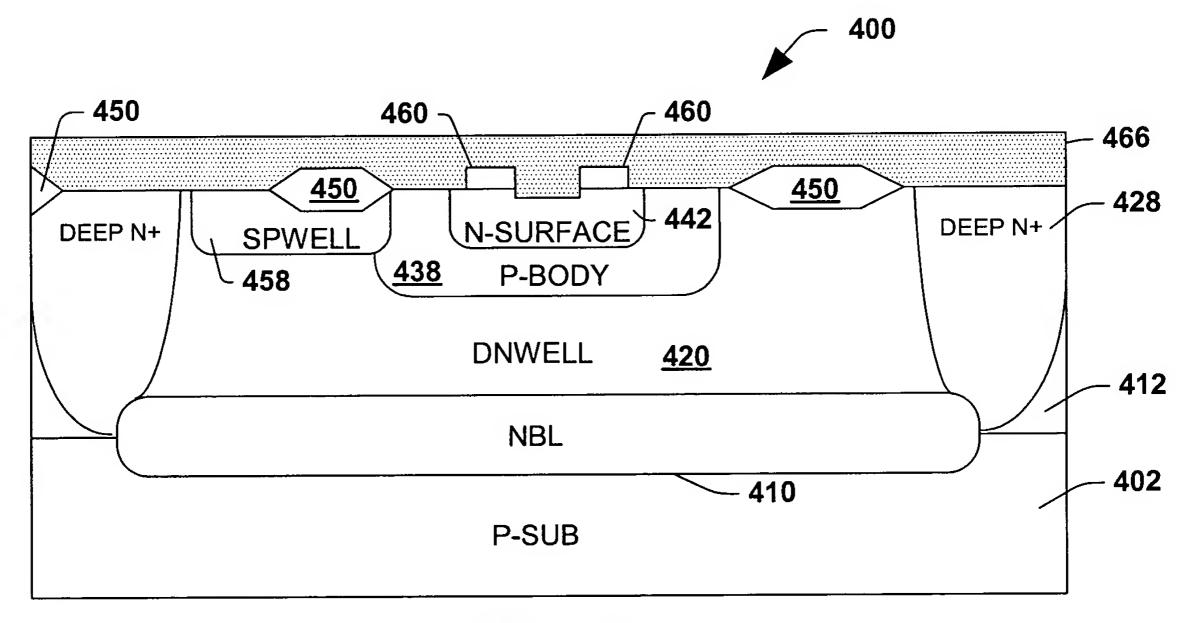


FIG. 28

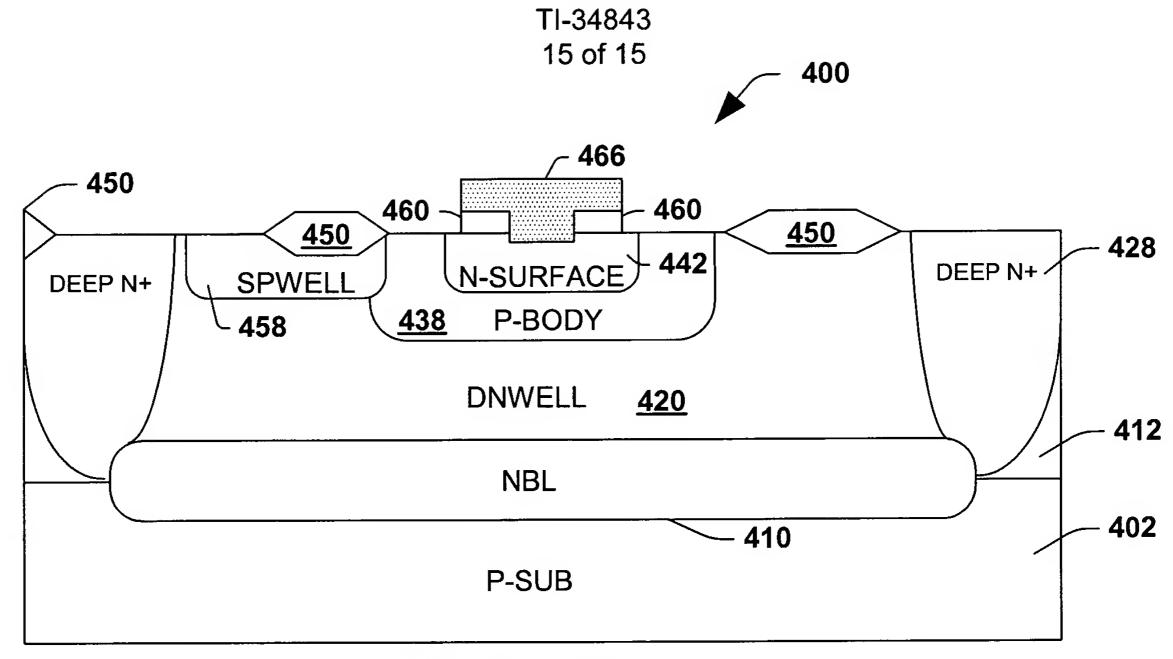


FIG. 29

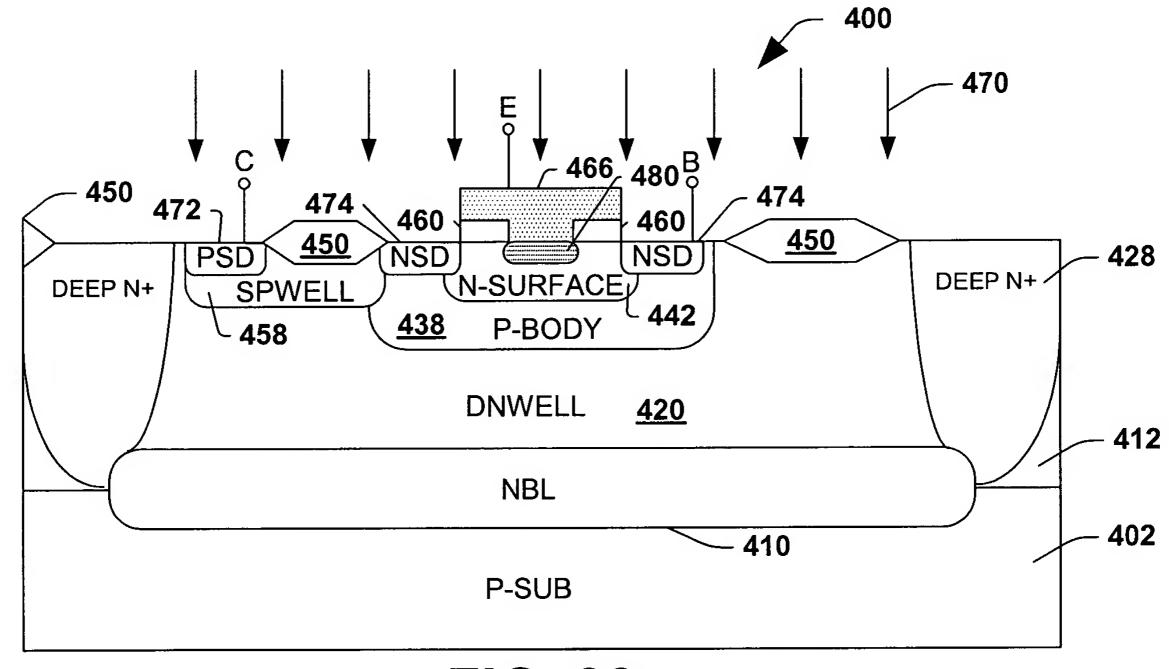


FIG. 30